

NEP 2020: Reforms in Education System

The National Education Policy (NEP) 2020, a landmark reform in India's educational landscape, holds immense promise for engineering students across the country. This policy aims to transform the education system to meet the needs of the 21st century and beyond, ensuring holistic development and employability of students.

The NEP 2020 is founded on the five guiding pillars of Access, Equity, Quality, Affordability and Accountability. It will prepare our youth to meet the diverse national and global challenges of the present and the future. It aims to transform India into a vibrant knowledge society by providing high-quality, inclusive, and equitable education to all citizens. Rooted in Indian ethos, NEP 2020 envisions a curriculum that imparts both local and global knowledge, preparing students for international competitiveness. It also proposes the revision and revamping of all aspects of the education structure, including the school regulation and governance, to create a new system which is aligned with the aspirational goals of 21st century education along with India's tradition, culture and value system

Distinguished Features of NEP 2020:

1. Holistic and Multidisciplinary Learning:

- NEP 2020 emphasizes a multidisciplinary approach to education, allowing engineering students to explore diverse subjects beyond their core discipline.
- This encourages holistic learning, fostering creativity, critical thinking, problem-solving skills and digital literacy.
- Students can pursue degree with minors in fields such as humanities, social sciences, and management, complementing their technical expertise and enhancing their employability in a rapidly evolving job market.
- Students can also opt for degree with Research, Honors or dual degrees.

2. Multiple Entry and Multiple Exit option

- Students can enter and exit educational programs at different stages, allowing them to tailor their education to personal needs, interests, and circumstances. This promotes lifelong learning and the ability to return to education at different life stages.
- Certification at Each Stage: Students receive certifications, diplomas, or degrees corresponding to the level of education completed, such as a certificate after the first year, a diploma after the second year, B. Voc. Degree after third year and the

UG degree after completing the entire program. This ensures that their progress is recognized even if they exit before completing a full degree.

- Credit Transfer: The Academic Bank of Credits (ABC) system facilitates the accumulation and transfer of credits across institutions and programs. This ensures that students can resume their education without losing their previously earned credits, enhancing mobility within the education system.
- By allowing students to earn qualifications at various stages, the system enhances employability. Students can enter the workforce at multiple points with relevant credentials and return to education to upgrade their skills as needed.
- The system encourages interdisciplinary learning and provides opportunities for students to pursue a broad-based education. This holistic approach aims to develop well-rounded individuals with diverse skills and knowledge, aligning with the broader goals of NEP 2020.

3. Education in Mother Tongue/Local Language:

- The policy emphasizes the importance of education in the mother tongue or local language to enhance understanding, retention, and communication skills among students

4. Flexibility and Choice-Based Credit System (CBCS):

- The policy promotes flexibility in curriculum design through the implementation of a Choice-Based Credit System (CBCS).
- Engineering students can now customize their course load based on their interests, career goals, and learning pace.
- This enables them to delve deeper into specialized areas, undertake interdisciplinary studies, or pursue internships and research projects for practical skill development.
- Such flexibility empowers students to take ownership of their learning journey, making education more engaging and relevant.

5. Vocational Education and Skill Development:

- NEP 2020 emphasizes the integration of vocational education and skill development into mainstream education, aligning it with industry needs.
- Engineering students will have access to skill-based courses, apprenticeships, and industry collaborations, enabling them to acquire practical skills and hands-on experience alongside theoretical knowledge.
- It ensures that graduates are not only academically proficient but also industry-ready, ready to contribute effectively to the workforce from day one.

6. Research and Innovation Ecosystem:

- The policy envisages fostering a vibrant research and innovation ecosystem within engineering institutes.
- It encourages institutes to establish research parks, incubators, and technology transfer offices to nurture entrepreneurship and innovation among students.
- Engineering students will have opportunities to engage in cutting-edge research projects, collaborate with industry partners, and commercialize their innovations, thereby fostering a culture of innovation and entrepreneurship from an early stage.

7. Emphasis on Ethical and Sustainable Practices:

- NEP 2020 underscores the importance of ethical and sustainable practices in engineering education.
- It integrates ethics, environmental studies, and social responsibility into the curriculum, ensuring that students develop a strong ethical framework and a sense of social responsibility.
- Engineering students will be equipped with the knowledge and skills to address complex societal challenges, such as climate change, resource scarcity, and ethical dilemmas in technology, contributing to a more sustainable and equitable future.

8. Global Exposure and Collaboration:

- The policy encourages internationalization of higher education, facilitating global exposure and collaboration for engineering students.
- It promotes partnerships with foreign universities, exchange programs, and joint research initiatives, enabling students to gain exposure to diverse cultures, perspectives, and cutting-edge technologies.
- This international experience enhances students' global competence, cross-cultural communication skills, and adaptability, making them competitive in the global job market.

9. Gradual de-affiliation from Universities

- The policy advocates a phased de-affiliation of colleges from universities, promoting autonomy and encouraging institutions to develop their academic frameworks and standards

Implementation of NEP 2020 in all Engineering Institutes in the State:

A flexible Credit Framework has been provided, vide, Govt. of Maharashtra GR dated 4th July 2023 and 3rd August 2023, regarding implementation of NEP 2020 aligned Curriculum for the Engineering/Technology courses. This is made mandatory for all the autonomous engineering institutes from the A.Y. 2023-24 and for affiliating engineering institutes from AY2024-25.

Distinguished Features of the GR dated 4th July 2023

1. Multiple Entry and Multiple Exit options:

- The Four-year Bachelor's Multidisciplinary Engineering Degree Programme allows the students to experience the full range of holistic and multidisciplinary education in addition to a focus on the chosen major and minors as per their choices and the feasibility of exploring learning in different institutions.
- Students receive certifications, diplomas, or degrees corresponding to the level of education completed, such as a certificate after the first year, a diploma after the second year, B. Voc. Degree after third year and the UG degree after completing the entire program. This ensures that their progress is recognized even if they exit before completing a full degree

2. Choice of Major and Minor Subjects

- Major (Core) Subject is the Engineering/ Technology discipline or subject of main focus and the degree will be awarded in that discipline/ Subject. Students should secure a minimum 50% of total credits through Core Courses.
- Students shall select a 'Major (Core) Subject' and a 'Minor Subject' from the lists of various Subject Combinations and Options provided by the State Universities/ Autonomous Colleges.
- Minor subject is a compulsory Multidisciplinary Minor Subject with 14 Credits, which includes for the award of the basic Bachelor's Degree i.e. within 160-176 credits.
- In addition, for the award of Bachelor's Degree- with Double Minor OR Honours, students shall have to earn additional 18-20 credits by opting for courses of Emerging Specialisations or the Same Discipline, respectively. For the award of Bachelor's Degree- Honours with Research, students shall have to earn additional 18-20 credits through Research Project or Dissertation.

3. Courses on Indian Knowledge System (IKS)

- Indian Knowledge Systems (IKS) is an innovative cell under Ministry of Education (MoE) at AICTE, New Delhi. It is established to promote interdisciplinary research on all aspects of IKS, preserve and disseminate IKS for further research and societal applications.
- IKS course has been included in the Curriculum Framework as a Generic IKS Course and/or Subject-Specific IKS Courses.

4. The Academic Bank of Credits (ABC) system:

- This facilitates the accumulation and transfer of credits across institutions and programs. This ensures that students can resume their education without losing their previously earned credits, enhancing mobility within the education system All State Universities/ Autonomous Institutes promote registering on ABC. The Credits awarded to a student for one programmes from an institution may be transferred/redeemed by another institution upon the student's consent through ABC.

5. Outcome Based Curriculum:

- The curriculum are to be designed in accordance with the international best practices and the current recommendations of NHEQF and National Credit Framework. Universities as well as the autonomous institutions shall adopt Learning Outcomes-based approach to curriculum planning and development, teaching, learning, and assessment methods.

6. Strengthening of Industry-Academic Linkages:

- The Universities are advised to strengthen the Industry-Institute Linkages for the facilitation of involvement of Industries in the smooth conduct of Internships/Apprenticeships programmes for all students.

7. Key Result Areas (KRA):

- Besides transformation as Multidisciplinary HEI, the State Universities and their Affiliated Colleges are advised to undertake the execution of relevant Key Result Areas (KRA) as a part of the successful implementation of NEP 2020.

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